

### **REMARKS**

The Examiner is thanked for the thorough examination of the application. No new matter is believed to be added to the application by this Amendment.

### **Entry Of Amendment**

Entry of this Amendment under 37 C.F.R. §1.116 is respectfully requested because it cancels a claim (Claim 17) and places the application in condition for allowance. Alternately, entry is requested as placing the application in better form for appeal.

### **Status Of The Claims**

Upon entry of this Amendment, claims 1-16 are pending in the application. The Examiner has allowed claims 1-13. This Amendment cancels claim 17 and incorporates its subject matter into claim 14.

### **Rejections Based On Wong**

Claims 14 and 17 (now incorporated into claim 14) have been rejected under 35 U.S.C. §102(b) as being anticipated by Wong (U.S. Patent 6,545,293). Claim 15 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Wong in view of Cleeves (U.S. Patent 6,004,874). Claim 16 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Wong in view of Jen (U.S. Patent 6,274,400). Applicants traverse.

The present invention pertains to a novel method for manufacturing a semiconductor device. Of the many embodiments of the present invention, claim 14 typically sets forth a novel

combination of steps that includes providing a substrate, forming a photoresist layer over the substrate, forming a conductive layer over the photoresist layer, and simultaneously removing the photoresist layer and the conductive layer by etching.

Wong pertains to a thin film transistor flat display. At page 2 of the Office Action, the Examiner points to Figures 4D and 4E of Wong, which depict a substrate 41, a photoresist layer 60 and a conductive layer 62.

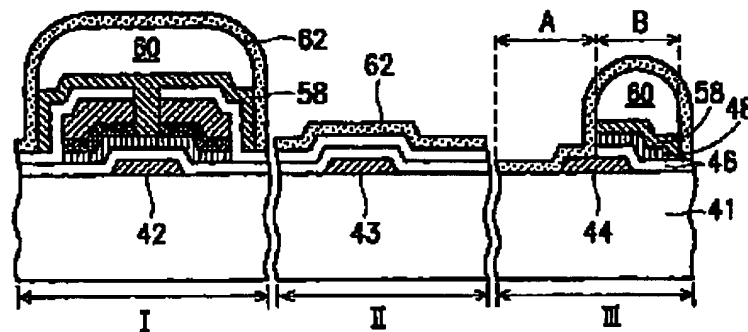


FIG. 4D

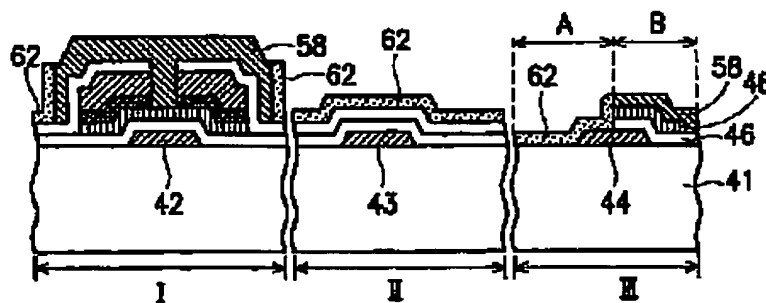


FIG. 4E

Figs. 4D-4E  
of Wong

In rejecting claims 14 and 17, the Examiner points to column 3, lines 52-55 of Wong, which states: "Finally, as shown in FIGS. 3E and 4E, a *lift-off process* is used to remove the second conductive layer 62 above the patterned photoresist 60 and the patterned photoresist 60 itself." (Emphasis added).

Wong fails to disclose or suggest simultaneously removing the photoresist layer and the conductive layer, such as is set forth in instant claim 14 of the present invention. Wong additionally fails to disclose or suggest removing the photoresist layer and the conductive layer by etching, such as is set forth in instant claim 14 of the present invention.

That is, Wong uses a lift-off process to remove the photoresist and the conductive layer. The Semiconductor Glossary<sup>1</sup> defines a lift-off process as a “process allowing definition of pattern on the wafer surface *without etching*; typically used to define geometry of hard to etch metals such as gold; metal is lifted off in selected areas by dissolving underlying resist.” (Emphasis added, *see* attachment). In contrast, claim 14 of the present invention uses *etching* to simultaneously remove the photoresist and the conductive layer. As a result, Wong not only fails to teach or suggest the present invention, but Wong additionally teaches away from using an etch process step, such as is set forth in the present invention.

A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983). A *prima facie* case of obviousness may also be rebutted by showing that the art, in any material respect, teaches away from the invention. *In re Geisler*, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed. Cir. 1997).

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<sup>1</sup> See [www.semiconductorglossary.com/default.asp?searchterm=liftoff%2C+lift-off%2C+process](http://www.semiconductorglossary.com/default.asp?searchterm=liftoff%2C+lift-off%2C+process)

As a result, Wong fails to anticipate the present invention. Wong additionally fails to be the basis of a case of *prima facie* obviousness.

At page 3 of the Office Action, the Examiner turns to Cleeves for teachings pertaining to positive and negative photoresist to reject claim 15. At pages 3 and 4 of the Office Action, the Examiner turns to Jen for teachings of the conductive layer being formed from a metal or metal oxide. However, these teachings of Cleeves and Jen fail to address the deficiencies of Wong in teaching or suggesting a claimed embodiment of the present invention.

Accordingly claim 14 is neither taught by nor unpatentable over the applied art references. Claims depending upon claim 14 are patentable for at least the above reasons. These rejections are overcome and withdrawal thereof is respectfully requested.

#### **Prior Art**

The prior art cited but not utilized by the Examiner indicates the status of the conventional art that the invention supersedes. Additional remarks are accordingly not necessary.

#### **Foreign Priority**

The Examiner has acknowledged foreign priority in the Office Action mailed April 6, 2006.

#### **The Drawings**

The Examiner has accepted the drawing figures in the Office Action mailed April 6, 2006.

**Conclusion**

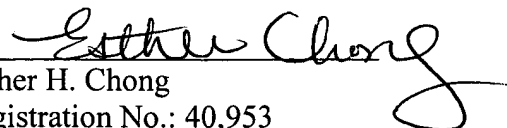
The Examiner's rejections have been overcome, obviated or rendered moot. No issues remain. It is believed that a full and complete response has been made to the Office Action. The Examiner is accordingly respectfully requested to place the application in condition for allowance and to issue a Notice of Allowability

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert E. Goozner, Ph.D. (Reg. No. 42,593) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

Dated: November 16, 2006

Respectfully submitted,

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Term (Index)	Definition
liftoff, lift-off, process	process allowing definition of pattern on the wafer surface without etching; typically used to define geometry of hard to etch metals such as gold; metal is lifted off in selected areas by dissolving underlying resist.

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